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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,913	12/07/2005	Adrianus W.P.G.G. Vaassen	NL03 0686 US1	9556
65913	7590	01/13/2009		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER DINH, PAUL	
			ART UNIT 2825	PAPER NUMBER
			NOTIFICATION DATE 01/13/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary

Application No.

10/559,913

Applicant(s)

VAASSEN, ADRIANUS W.P.G.G.

Examiner

Paul Dinh

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This is a response to the Request for continued examination (RCE) and amendment filed on 12/9/08.

Claims 1-20 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8 and 10-20 are rejected under 35 U.S.C. 102(b) as being anticipated by the prior art of record Grzyb (US patent 5,656,834)

(Claim 1)

A power bus and a ground bus (*horizontal busses 67-68 in fig 1*) for supplying power from respective power and ground pads to a plurality of circuit elements (*standard cells in fig 1*) on the IC; and

a plurality of decoupling cells (*cap cells 20*) for providing a static current flow between the power and ground pads, and wherein the power distribution network is configured such that each given circuit element (*standard cell*) on the IC is arranged with a combined distance between the power pad and said circuit element, and between the ground pad and said circuit element, and each of the combined distances being equal (*This claimed feature is disclosed in fig 1, the symmetrical layout of power distribution and equal length layout of power busses/rails length layout of ground busses/rails and in fig 1 implement this feature, for example for each*

standard cell in fig 1, each combined distance (length of rails/wires/busses/interconnections/conductors) from the standard cell to power and ground being equal)

(Claim 2) wherein the combined distances are equal for predominantly all of the circuit elements in the IC (*equal combined distances is explained above, note that "Only two rows of standard cells are shown, but it will be understood that an actual IC implemented as a standard cell design would have many such rows. Each row could typically contain from 50-60 standard cells. In FIG. 1, two such rows 13, 14 are shown" (see corresponding text of fig1)*).

(Claim 3) wherein the power pad and the ground pad are arranged at diagonally opposite corners of the IC (fig 1-4).

(Claim 4) wherein the power distribution network comprises:

A power bus comprising a vertical section (10 in fig 1) connected to the power pad, and one or more horizontal sections (67 in fig 1) connected to the vertical section;

A ground bus comprising a vertical section (11 in fig 1) connected to the ground pad and one or more horizontal sections (68 in fig 1) connected to the vertical section;

Wherein the vertical section (10) of the power bus is arranged parallel to the vertical section (11) of the ground bus, such that the one or more horizontal sections (67) of the power bus interleave the one or more horizontal sections (68) of the ground bus.

(Claim 5) Wherein a horizontal section (67 in fig 1) of the power bus and a horizontal section (68 in fig 1) of a ground bus form a row (13 or 14 in fig 1) for powering one or more of the circuit elements (standard cells).

(Claim 6) Wherein one or more circuit elements (standard cells) are located between the horizontal section (67) of the power bus and the horizontal section (68) of the ground bus.

(Claims 7-8) Wherein the decoupling cells (Cap cells 20) include decoupling capacitors ("*decoupling capacitor 20" (col 3 line 7)*"); wherein the decoupling cells are configured to be the same height as the circuit elements (*boxes 18 containing decoupling cells 20 in fig 11 are configured to be the same height as blocks 15 containing standard cells 20*).

(Claim 10) Wherein the power distribution network comprises one or more smaller power distribution networks having the same configuration (fig 2-5)

(Claims 11-12) wherein the power distribution network and the decoupling cells are configured to maintain maintains the voltage drop between the power pad and each circuit element constant, relative to the voltage drop for predominantly all of the circuit elements in the IC (*Although the terms constant voltage drop is not used in this prior art, the opposite-symmetrical-equal-length routing layout of power distribution to row based standard cells in this prior art inherently teaches the constant voltage drop feature in this claim*).

(Claim 13) Wherein the decoupling cells (20) are configured to selectively couple each of said given circuit elements (standard cells) to maintain combined distance constant among predominantly all of the circuit elements (this is already explained in claim 1)

(Claims 15-16) wherein the decoupling cells (20) maintain the constant combined distance for a circuit element by selectively connecting the conductors to the circuit element (standard cell) to decrease/increase the distance between the circuit element and one of the power pad and the ground pad in a manner that is complementary to an increased/decreased distance between the circuit element and the other one of the power pad and the ground pad (*fig 1 discloses this feature in terms of symmetrical-opposite- layout that by utilize vertical parallel power/ground busses/rails/conductors and horizontal power/ground busses/rails/conductors as shown in fig 1 to power row-based cells*).

Claims 14 and 17-20 recite similar subject matter and the same rejection applied.

Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by the prior art of record Nassif (US pub 2004/0073881)

(Claim 1)

A power bus and a ground bus (implement by power distribution grid network (par 35) for supplying power from respective power and ground pads to a plurality of circuit elements (cells in fig 4) on the IC; and

a plurality of decoupling cells (decaps in fig 4) for providing a static current flow between the power and ground pads, and wherein the power distribution network is configured such that each given circuit element (cell) on the IC is arranged with a combined distance between the power pad and said circuit element, and between the ground pad and said circuit element, and each of the combined distances being equal (*This claimed feature is disclosed in*

fig 4, the symmetrical grid layout of power distribution and equal length layout of power busses/rails/conductor and equal length layout of ground busses/rails via grid/mesh in fig 4 implement this feature, for example for each row based cell in fig 4, each combined distance (length of rails/wires/busses/interconnections/conductors) from the cell to power and ground being equal)

(Claims 2-3) wherein the combined distances are equal for predominantly all of the circuit elements in the IC and the power and ground pads are arranged at diagonally opposite corners of the IC (fig 4).

(Claim 4) The limitation in claim 4 (vertical/horizontal/parallel power busses/rails/conductors) are inherent in this prior art since this prior art is about distribution power network using grid.

(Claim 5) Wherein a horizontal section of the power bus and a horizontal section of a ground bus form a row for powering one or more of the circuit elements (fig 4).

(Claim 6) Wherein one or more circuit elements (cells) are located between the horizontal section of the power bus and the horizontal section of the ground bus (fig 4).

(Claims 7-8) Wherein the decoupling cells (Decaps) include decoupling capacitors (*par 9, 26*); wherein the decoupling cells (decaps in fig 4) are configured to be the same height as the circuit elements (*cells in fig 4*).

(Claim 9) Wherein the decoupling cells (Decaps in fig 4) are arranged between circuit elements (Cells in fig 4) on the IC

(Claim 10) Wherein the power distribution network comprises one or more smaller power distribution networks having the same configuration (fig 3, 6)

(Claims 11-12) wherein the power distribution network and the decoupling cells are configured to maintain maintains the voltage drop between the power pad and each circuit element constant, relative to the voltage drop for predominantly all of the circuit elements in the IC (*par 7, 18, 35, 52*)

(Claim 13) Wherein the decoupling cells (decaps) are configured to selectively couple each of said given circuit elements (cells) to maintain combined distance constant among predominantly all of the circuit elements (this is already explained in claim 1)

Claims 14-20 recite similar subject matter and the same rejection applied.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Dinh whose telephone number is 571-272-1890. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jack Chiang can be reached on 571-272-7483. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul Dinh/

Primary Examiner, Art Unit 2825